

ABSTRACT

A compound semiconductor epitaxial substrate for use in a strain channel high electron mobility field effect transistor, comprising an InGaAs layer as a strain channel layer 6 and AlGaAs layers containing n-type impurities as back side and front side electron supplying layers 3 and 9, wherein an emission peak wavelength from the strain channel layer 6 at 77 K is set to 1030 nm or more by optimizing the In composition and the thickness of the strain channel layer 6.